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**Amtrak: Two big strides
on the road to modernization**

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**NdeM's
power play
pays off**



FEATURES



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14 NdeM's power play pays off

With a great assist from its Aguascalientes shop, where GE locomotives are being assembled from kits, Mexico's biggest railroad is overcoming a power shortage that at times has all but closed down some critical lines.

22 Amtrak narrows the generation gap

Late in September the first of a second generation of Amfleet cars began to come out of Budd's Red Lion plant. When delivery of the 150 cars is completed, Amtrak will have a fleet of nearly 1,600 new or good-as-new cars.

28 "Something to show the world"

On September 25, Amtrak dedicated its newly-renovated Chicago maintenance base. A total of \$44 million was spent on the facility, whose structures, scattered along 12 miles of track, have 370,000 square feet of space.

32 Operation Lifesaver lives up to its name

Started by Union Pacific 10 years ago, the program has become nation-wide in scope and has played a major role in reducing grade-crossing casualties. Here, UP's Ed Schafer gives some pointers on how it can best be used.

33 What rail deregulation means to the grain industry

Among options that may soon open up, says AAR's Richard E. Briggs, is containerized grain. "This may sound like a pipedream today, but today's pipedream is tomorrow's reality in the deregulated transportation atmosphere."

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COVER: NdeM locomotive assembled at Aguascalientes from a GE kit.

Latin America's railways

recognition of the prestige of our training institute has crossed our borders. It is not unusual to see groups of students coming from foreign railroads."

Other foreigners recognizing the quality of NdeM training are representatives of General Electric involved with locomotive assembly at Aguascalientes. "They're excellent workmen," says Earl Hanson, GE's manager for export sales of locomotive components. "They take a great deal of pride in their work." About 50 NdeM-trained Mexicans form the crew at Aguascalientes. Also there full-time is Edward G. Bricker, GE project manager, who formerly was locomotive-assembly superintendent at Erie. In addition, there are four roving GE service engineers.

"Those locomotives are the pride of their fleet," Hanson says. "They watch them all the time to avoid even the slightest problem."

● **Shop improvement.** Though their skills have improved, NdeM shop employees still need better tools. Manual operations have been the norm, although that is changing. "Of course," says Harfuch, "there are plans for improving our shops, both for locomotives and for cars. Among our priorities are cleanliness, testing, productivity, and mechanization, and we are proceeding to acquire equipment, machinery, and tools to achieve those objectives. The estimated investments for strengthening our facilities are \$50 to 650 million pesos [\$25 million-\$28-million] each year for at least five years." NdeM's 1981 budget included about \$17 million for shop improvement.

The shop at San Luis Potosi will handle all heavy repairs of locomotives, while Aguascalientes does the big work on cars, besides assembling locomotives. The number of other repair points is being reduced to about 25 from 32. "Diesel locomotive maintenance has simply been carried out at too many places," Harfuch says.

● **A better car fleet, too.** Though NdeM's most dramatic equipment improvement has come in motive power, the freight car fleet is showing significant gains as well. This year alone, about 3,700 new cars are going into service, at a total cost of about \$217 million. The bulk of this new equipment is coming from Mexico's own car-builder, Constructora Nacional de Carros de Ferrocarril, S.A. Keeping costs down by concentrating on basic units such as boxcars, gondolas, and hoppers, Constructora has been successful in bidding against foreign competitors. (World Bank loan terms require international bidding.)

That leaves a good market for builders of specialty cars. One major supplier has been Portec, whose 1981 deliveries include 60 piggyback flatcars, 150 rotary dump gondolas, 120 bulkhead flat cars, and 150 side-dump ballast cars (RA, Aug. 31, p. 10.) Also this year, Portec pro-

duced 100 bulkhead flats for one of the smaller roads, and 20 side-dump cars for Mexico's Secretariat of Communications and Transportation (SCT), which is responsible for building new track and yards.

Fruit Growers Express is another U.S. carbuilder with a growing role in NdeM improvement, especially as a supplier of cabooses. This year alone, NdeM has received 152 FGE radio-equipped units with cupolas offering visibility for mountain routes. Other suppliers include: Multi-Systems International, 100 ballast hopper cars and 25 piggyback flatcars; Hawker Siddeley, 95 ballast hopper cars; Mecano Export-Import of Rumania, 44 rotary-dump hopper cars.

● **Bold plans for 1982-85.** Such builders are likely to stay busy for some time, as NdeM carries out bold plans for acquiring new rolling stock through 1985. Outlays for 1982 through 1985 just for new freight cars are programmed at nearly \$800 million, according to Ing. Alfonso Hernandez Lozano, assistant manager-planning and organization. Including this year's program, NdeM will have acquired approximately 16,600 new freight cars by the end of 1985.

NdeM's total 1981-85 program will cost about \$1.7 billion. That doesn't include new track, which is part of the Secretariat's 1981-85 program involving expenditure of at least another \$1.5 billion. SCT's plans include 514 miles of new double track, 356 miles of main-line electrification, and four new major classification yards, among other things.

Also part of the combined \$3.2-billion NdeM/SCT program for 1981-85 are: 961 miles of new rail, 1,240 miles of new centralized traffic control, 850 new or reinforced bridges and culverts, and full installation of a computerized system for information and yard control.

● **"We are railroaders."** These projects are part of Gomez Z.'s version of the railways as the backbone of Mexico's transportation system. He is impatient with people who don't share his enthusiasm. Among those people are certain Mexican journalists who seem to think that the long-neglected rail system can be transformed overnight. In the September issue of *Ferroviales*, NdeM's magazine, Gomez Z. wrote:

"We're not going to be bothered by talk and rumors. We will rely on what we are and what we've accomplished. We are railroaders, with dedication and proven patriotism. That is something we have shown with deeds, not with words. We are assembling locomotives, we are reducing curves and grades, we are building a communication system. We are showing the President that what he entrusted to us is in very good hands. The same man who directs the destiny of our country knows full well our daily struggle and the efforts we are making to constantly improve our service." ■

The XV Pan American Railway Congress, which meets in Mexico City Oct. 25-Nov. 2, will focus the attention of the railway world on the continuing struggle of Latin American countries to modernize rail systems that in many instances are suffering from half a century or more of neglect. Progress is most visible in the host country, Mexico, which is investing billions of petropesos in a sweeping program of railway rehabilitation. But there is also considerable activity elsewhere:

—Brazil is giving top priority to three major programs: completion of a new steel line (of which a 227-mile priority section should be in operation in September 1983); construction of new lines for the coal industry; and expansion and improvement of seven urban rail systems. Steel-line construction alone will cost an estimated \$1 billion. Meanwhile, the former Sao Paulo Railway (FEPASA), now part of the national system, is moving towards further electrification. A \$300-million contract for the first phase of electrification in the Uberabas-Santas export corridor has gone to a European group led by Francorail-MTE.

—Argentina has begun work on the \$433-million electrification of the suburban Roca line serving Buenos Aires; contracts have gone to a Japanese consortium led by Marubeni Corp. and including Toshiba, Mitsubishi Electric and Hitachi.

—Electrification of Ecuador's railway is now the subject of feasibility studies by firms from Italy and Hungary.

—Bolivia is still pondering a solution to what remains the country's most pressing railway problem: linking the Andean and eastern networks. The cost could be close to \$1 billion.

—In Chile, a strictly commercial approach to railroad operation has cut the labor force to about 10,000, compared with 25,000 in 1974. Many losing lines have been closed. The Chilean government has ended all subsidies to the railroad, which was turned over to a new company, Corfo, in 1979.

—In Paraguay, some track improvements are being made in anticipation of government approval for an overall modernization program that would include electrification of the President Carlos Antonio Lopez Railway. Bids have been submitted by a number of international groups.

Country	Length (miles)	Gauge	Freight cars	Locomotive-hauled passenger cars	Self-propelled passenger cars	Locomotives
Argentina						
Argentine Rys. (FA)	23,943	5'6"; 4'8½" 3'3¾"	66,125	4,342	1,388	1,422 steam 1,196 diesel
Bolivia						
Guaqui-La Paz Ry	65	3'3¾"	139	1		2 steam 1 electric 63 diesel
Bolivian National Rys. (ENFE)	2,177	3'3¾"	2,151	187	47	
Brazil						
Federal Rys. of Brazil (RFFSA) (includes FEPASA)	17,370	3'3¾"; 5'3"; 2'6"	60,034	2,268	462	1,857 diesel 103 electric 44 steam 202 diesel
Vitoria a Minas Ry. (EFVM)	469	3'3¾"	11,501	49	47	
Chile						
Arica-La Paz Ry	135	3'3¾"	476	97	4	12 diesel 38 steam 10 diesel
Iquique-Pueblo Hundido Ry	782	4'8½"; 3'3¾"	1,160	26		
Chilean State Rys. (EFE)	4,771	5'6"; 3'3¾"	9,856	804	76	231 diesel 438 steam
Antofagasta & Bolivia Ry Co. (FCAB)	434	3'3¾"	2,600	92		22 diesel 4 steam
Colombia						
National RRs. of Colombia (FNC)	2,041	3'	5,399	215	15	6 steam 169 diesel
Costa Rica						
Costa Rica RR (FECOSA)	585	3'6"	2,275	120	63	14 electric 90 diesel
Cuba						
Cuban Rys. (FEC)	3,141	4'8½"; 3'				170 diesel
Dominican Republic						
Central Romana RR	235	4'8½"	950			15 diesel
Ecuador						
Ecuadorean State Rys. (ENFE)	1,538	3'6"	400	50	52	24 diesel 31 steam
El Salvador						
National Rys. of El Salvador (FENADESAL)	374	3'	599	59	43	20 diesel 4 steam
Guatemala						
Guatemala Rys. (FEGUA)	512	3'	1,500	80	17	26 diesel
Honduras						
Honduras National Ry. (FNH)	608	3'6"; 3'	2,700	265		57 diesel 12 steam
Jamaica						
Alpart Ry.	10.8	4'8½"	343			5 diesel
Kaiser Jamaican Bauxite Co.	15	4'8½"	88			4 diesel
Jamaican Ry. Corp. (JRC)	205	4'8½"	266	35	6	31 diesel
Mexico						
Southeast United Rys. (FUS)	1,384	4'8½"; 3'	834	59		31 diesel
National Rys. of Mexico (NdeM)	12,659	4'8½"	32,843	1,048	39	1,084 diesel
Chihuahua Pacific Ry. Co. (CHP)	942	4'8½"	1,782	48	14	44 diesel 169 diesel
Pacific RR (FCP)	2,310	4'8½"	5,524	168		
Sonora Baja California Ry. (SBC)	379	4'8½"	309	39		19 diesel
Nicaragua						
Ry. of Nicaragua	232	3'6"	129	1	8	12 diesel
Panama						
Panama RR (FLP)	47	5'	358	24		6 diesel
National Ry. of Chiriqui	76	3'	24	5	4	5 diesel
Chiriqui Land Co. Armuelles & Bocas	228	3'	975			33 diesel
Paraguay						
President Carlos Antonio Lopez Ry. (FPCAL)	265	4'8½"	147	9		21 steam
Peru						
Southern Peru Copper Corp.	177	4'8½"	233			8 diesel
Mining Co. of Central Peru	127	4'8½"	689	13		12 diesel 2 steam
Peruvian National Rys. (ENAFER)	997	4'8½"; 3'	2,101	175	37	84 diesel 24 steam
Uruguay						
Uruguayan State Rys. (AFE)	1,803	4'8½"	2,893	94	45	110 diesel 17 steam
Venezuela						
Orinoco RR	143	4'8½"	1,485			36 diesel
Venezuelan National Rys. (FNV)	138	4'8½"	284	21		12 diesel

Operation Lifesaver lives up to its name

If you lay out the numbers side by side, the problem of accidents at rail/highway grade crossings is a small one, compared with the overall problem of motor-vehicle accidents.

Tens of thousands of people are killed each year in motor-vehicle accidents. Last year, and in four of the past six years, the number of people killed in accidents at public crossings has been below 1,000. In 1980, the number of fatalities at both public and private crossings was 833, and 85 of those deaths did not involve the collision of a train and a motor vehicle. Since 1976, the number of persons injured and the total number of casualties have been dropping. The number of accidents last year was the lowest since reporting requirements were changed in 1975.

And yet, the population has been going

up, the number of licensed drivers has been going up, the number of motor vehicles on the road has been going up. Rail traffic, in a number of areas, has been going up.

What accounts for the improvement in the numbers? Some of it, without a doubt, comes from construction of new grade separations and from the installation of more crossing-protection devices, gates, lights, bells.

Some of it, without a doubt, also comes because of Operation Lifesaver.

But, with grade-crossing accidents accounting for such a tiny percentage of total motor-vehicle deaths, why all the attention paid to crossing-accident prevention? Why an Operation Lifesaver?

● **Railroad's biggest hazard.** For one thing, while crossing deaths may be a "tiny percentage" of all motor-vehicle

fatalities, crossing accidents account for close to 60% of the fatalities associated with railroads.

For another, the chances of a motorist getting killed in a crossing accident are a lot higher than they are in the case of your average highway accident. Trains, as Operation Lifesaver keeps trying to point out, are a lot bigger and they are harder to stop than automobiles and trucks.

For a third, while dedicated do-gooders may tsk-tsk at such a thought, effective public safety programs are good public relations: A railroad putting its money and its people out there campaigning to save lives has got to reap certain benefits for its image, and anybody who decries this is simply being unworlly.

What is Lifesaver? It's a program that began in 1972 in Idaho, a program that has since been extended into 28 other states. It's a program that was started by one railroad, Union Pacific, a program that most of the industry has now become involved in. It's a program that has gone national, in the sense that the National Safety Council and the Federal Railroad Administration have become involved, but it's still a program that is state-oriented, not really national-in-scope.

● **Following the four E's.** Several observations might be made about Operation Lifesaver, as it heads toward its 10th anniversary:

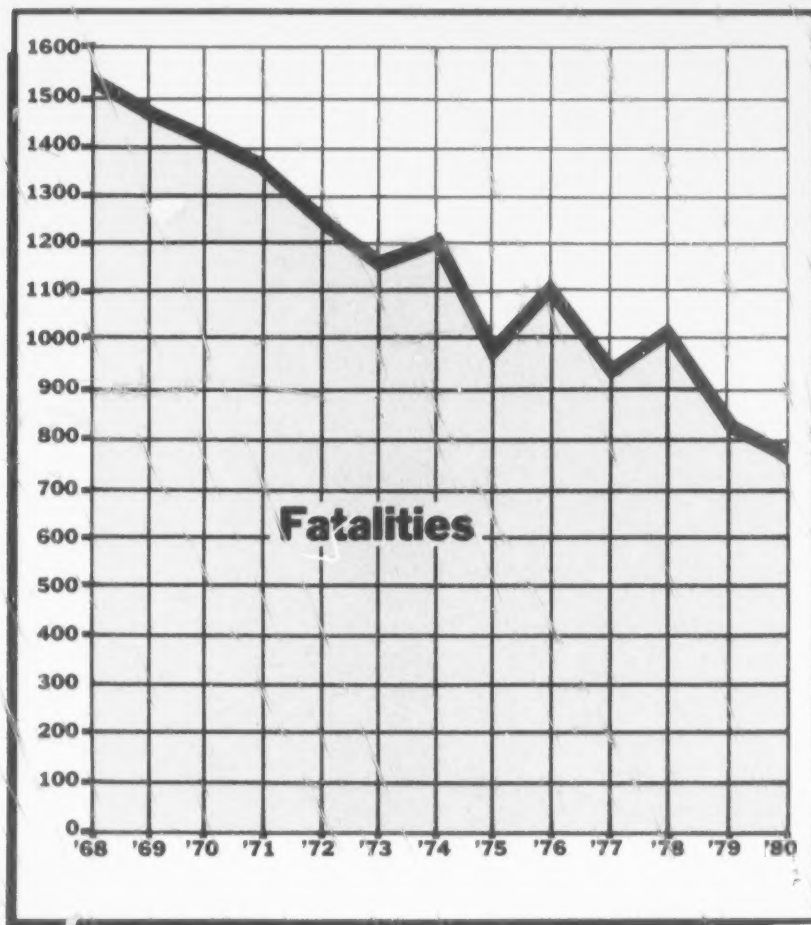
—Education is the first of the four E's that have to be there. Motorists have to be educated about the size, speed, braking capability and crunching power of trains. But education alone is not enough. It has to be teamed with Enforcement and Engineering. (The fourth E is Evaluation.)

—Cooperation with law-enforcement agencies is vital. Police can be a big help in the educational process, and they can also write tickets so that crossing-law violators will pay attention to the education programs.

—Cooperation between Lifesaver's promoters and other departments within a railroad is no less vital, and this can go all the way from getting improved protection devices installed on a high-priority basis to cutting brush in order to improve visibility at a crossing.

—In order for it to produce long-term and lasting results, Lifesaver almost has to be a fire, fall-back and fire-again kind of thing, not a continuous campaign. Reason: Crisis prolonged becomes commonplace. Those who have been around Lifesaver for a long time are convinced that well-structured and concentrated campaigns every two or three years work better than long-running campaigns that can turn people off because of sheer boredom.

—Rail labor organizations, specifically the Brotherhood of Locomotive Engineers and the United Transportation Union, should be as involved as any or-



It all began on UP, which had a problem in Idaho. . .

Often, it's hard to establish the parentage of a good thing: Once it's known to be good, everybody's a Daddy.

But in the case of Operation Lifesaver (a proven good thing), there are no such problems: Daddy is Union Pacific, specifically Edwin C. Schafer, the now-retired general director-public relations and advertising of UP.

Ed Schafer recalls how it all started, going-on 10 years ago:

—UP had had a problem in Idaho for some time. Nothing in the way of traditional safety programs seemed to be working, and the problem was getting worse. UP was getting a bad name in the state. Worse, a lot of people were getting killed and injured.

—But then, a major meeting of law-enforcement officers was coming up, and Schafer saw an opportunity: "If we could bring them a program and enlist state aid, the impact would be a whole lot greater, because it wouldn't just be the railroad coming there with its sad tale." The police were receptive, knowing that they had no funds for a grade-crossing safety campaign and no real expertise, and knowing that a unified approach would work better.

—UP volunteered to develop a program and to support it with whatever it took, if the railroad could get state backing, which would—importantly—include a kickoff by the governor.

—This would be a program involving every UP department that had to be involved, most of which came under then-Vice President-Operations Bill Fox. Fox bought the program.

—Bill wasn't the only "fox" working for UP. Schafer made a particular point of promising the governor that UP would provide an assessment on how the life-saving campaign was working, knowing that if state agencies knew the governor would know what was going on, those agencies would work to make the program work.

—Any promotional campaign needs some kind of gimmick, and Ed Schafer went for the candy-with-the-hole-in-the-middle, the Lifesaver. Ergo, Operation Lifesaver. It took a bit of doing, to convince the candy company to lend its name



13th St. grade crossing in Omaha, home of the railroad that initiated Operation Lifesaver.

to the campaign, but eventually Operation Lifesaver even had special wrappers on special packages.

Operation Lifesaver worked in Idaho. It worked in six states where UP began it. In every case, the casualty numbers went down. And, it could be assumed, in every case the image of Union Pacific went up. UP started Lifesaver in Idaho because it had a problem and because, at least in the biggest (southern) part of the state, it was all by itself and could control the situation; in other states, it invited participation from other roads, whatever kind of participation they wanted to engage in, while telling those roads that, whatever, UP would put Lifesaver in.

Today, Ed Schafer looks back on close to 10 years of Lifesaver programs and makes a few observations.

One is that programs have to be localized: The enforcement aspect is vital, he says, and there is no enforcement aspect in a "national" program.

Another is that Operation Lifesaver will not be effective if a total dependence is put upon obtaining freebies: There is

some valuable exposure to be gained that way, he's ready to admit—between feature shorts in movie houses and public-service announcements on radio and television, maybe—but, as a professional in the business, he argues that the only thing television and radio stations and newspapers have to sell is time and space, and so Lifesaver proponents should be prepared to buy it. Union Pacific did.

A third is that Lifesaver has to be handled with intensity, but sporadically: Hit it hard, then leave it alone for a while, Ed Schafer says, meaning start it up, push it hard, leave it and then come back and hit it again.

Lifesavers, the candy-with-the-hole-in-the-middle, aren't really used so much as a symbol any more. Costs, one source says, are the reason. And that's too bad, because there could hardly be a better symbol. Besides, whether they helped prevent grade-crossing accidents or not, if you ever walked into a room where those peppermint candies were stored, boy, did they ever clear out your sinuses in a hurry.

ganizations in Lifesaver programs, and they are on a number of railroads; after all, it's their members who stand a chance of being killed or injured in virtually every grade-crossing accident.

—It would probably be a good idea for

the first national Operation Lifesaver symposium to be followed by a second, a third and so forth. The first such meeting was held a few weeks ago in a Chicago suburb, and it did attract people from Maine to Texas to California, and it may

have had value as a means of letting people share ideas. But it also seemed to prove that for various reasons, Lifesaver should continue to be a localized, state-by-state program with basic materials shared and adapted but with local control.

Market

CARLOADINGS

Loadings of revenue freight in the week ended Sept. 19 totaled 451,604 cars, according to the Association of American Railroads. This was a decrease of 673 cars, or 0.1%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Sept. 19 are estimated at 19.3 billion, an increase of 7.8% above the corresponding week of 1980.

REVENUE FREIGHT CARLOADINGS

Commodity	Sept. 19 week	Sept. 12 week
Grain	27,090	21,508
Other farm products	4,015	2,850
Metallic ores	38,187	34,633
Coal	134,303	118,753
Crushed stone, gravel & sand	12,928	10,844
Nonmetallic minerals	14,296	12,457
Grain mill products	14,907	12,087
Food & kindred products	15,751	13,363
Primary forest products	18,333	15,136
Lumber & wood products (except furniture)	6,920	5,230
Pulp, paper & allied products	19,038	16,336
Chemicals & allied products	24,933	21,819
Petroleum products	5,258	4,492
Stone, clay & glass products	13,603	11,767
Coke	6,667	6,097
Metals & products	15,116	12,887
Motor vehicles & equipment	14,226	11,298
Waste & scrap materials	12,109	9,792
Forwarder & shipper assn. traffic	9,507	7,867
All other carloads	44,172	35,263
LCL traffic	245	166
Total Cars Loaded	451,604	384,645
Cumulative total, 38 weeks	15,906,068	15,492,628
Estimated revenue ton-miles (billions) 38 weeks	675.1	664.9

PIGGYBACK LOADINGS

U.S. piggyback loadings for the holiday week ended Sept. 12 totaled 28,433 cars (11.9% below the corresponding non-holiday week of 1980) and 52,068 trailers or containers (down 10.9% from 1980). Cumulative volume for the first 37 weeks of 1981 is 1,199,094 cars (up 1.6% from 1980) and 2,169,169 trailers or containers (up 0.9% from 1980).

CANADIAN CARLOADINGS

Canadian railway revenue freight loaded in the ten-day period ended Aug. 31 totaled 6.6 million tons (down 11.6% from 1980). Cars loaded totaled 90,667 (down 13.5% from 1980). Cumulative loadings for 1981 were up to 1,689 million tons (down 4.4% from 1980).

● **Conrail.**—Is spending \$2.6 million to expand and improve its Bayview TrailVan terminal at Baltimore. The upgraded Bayview terminal will absorb work now performed at Dundalk, also in Baltimore. Car capacity will be increased from 18 to 54; and trailer parking capacity will be increased to 800, almost double the present capacity.

● **PLM Railcar Maintenance Co.**—Received a contract from the Grand River Dam Authority, Vinita, Okla., for maintenance of 479 cars used in movement of coal out of the Powder River Basin; the work will be handled at PLM's Alliance, Neb., shops. The maintenance subsidiary of PLM, Inc., also announced renewal of a contract with Louisville Gas & Electric Co., for maintenance of 75 coal-carrying cars; this work is to be handled by PLM mobile units at Louisville.

● **Freight cars and locomotives.**—The following report has been received from the AAR and the ARCI:

	DELIVERED			
	August		July	Eight months
	1981	1980	1981	1981 1980
Built new by carbuilders	2,971	6,158	2,864	31,132 55,730
Built new in RR shops	213	836	119	2,512 4,050
Built new—total	3,184	6,994	2,983	33,644 59,780
Rebuilt	65	18	47	763 023
TOTAL DELIVERED	3,249	7,012	3,030	34,407 60,703
Locomotives (new and rebuilt)	43	168	32	508 1,308
	ORDERED			
To be built new by carbuilders	798	2,531	1,315	12,231 27,482
To be built new in RR shops	0	38	0	253 2,915
To be built new—total	798	2,569	1,315	12,484 30,397
To be rebuilt	0	194	0	1,100 1,063
TOTAL ORDERED	798	2,763	1,315	13,584 31,460
	ON ORDER AND UNDELIVERED			
	September 1	August 1	Average backlog	
	1981	1980	1981	1980
To be built new by carbuilders	21,403	62,652	23,809	33,406 84,504
To be built new in RR shops	2,245	5,117	2,458	3,082 5,693
To be built new—total	23,648	67,769	26,267	36,488 90,197
To be rebuilt	337	240	402	316 354
TOTAL ON ORDER	23,985*	68,009	26,669	36,804 90,551
Locomotives (new and rebuilt)	267	557	306	350 951

*Due to revisions and cancellations of some orders, the Sept. 1, 1981 backlog has been reduced by 233 cars.

